

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
3 January 2003 (03.01.2003)

PCT

(10) International Publication Number  
**WO 03/000714 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 39/395**,  
39/40, 39/42, C12N 5/00, 5/02, C12P 21/08, C07K 16/00

(21) International Application Number: PCT/US02/20009

(22) International Filing Date: 24 June 2002 (24.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/300,190 22 June 2001 (22.06.2001) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:  
US 60/300,190 (CIP)  
Filed on 22 June 2001 (22.06.2001)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
24 July 2003

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(71) Applicant (*for all designated States except US*):  
**PANACEA PHARMACEUTICALS, INC.** [US/US];  
9700 Great Seneca Hwy., Rockville, MD 20850 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **GHANBARI, Hossein, A.** [US/US]; 9460 Tobin Circle, Potomac, MD 20854 (US). **GHANBARI, Kasra** [US/US]; 9460 Tobin Circle, Potomac, MD 20854 (US).

(74) Agents: **GOTTS, Lawrence, J.** et al.; Shaw Pittman LLP,  
1650 Tysons Boulevard, McLean, VA 22102-4859 (US).

(54) Title: COMPOSITIONS AND METHODS FOR PREVENTING PROTEIN AGGREGATION IN NEURODEGENERATIVE DISEASES

(57) Abstract: Disclosed are methods for treating a disease that involves protein aggregation, including Alzheimer's, Parkinson's, prion diseases such as BSE and CJD, and Down's syndrome. The methods involve administering to a subject suspected of having the disease a very high affinity antibody fragment immunoreactive with the protein that is aggregating. Such treatment will have the effect of preventing, slowing, or halting the disease progression by inhibiting protein aggregation.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/20009

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 39/395, 39/40, 39/42; C12N 5/00, 5/02; C12P 21/08; C07K 16/00

US CL : 424/133.1, 130.1, 139.1; 530/387.3, 387.9; 435/375

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/133.1, 130.1, 139.1; 530/387.3, 387.9; 435/375

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
MEDLINE, EMBASE, CAPLUS, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SOLOMON et al. Monoclonal antibodies inhibit in vitro fibrillar aggregation of the Alzheimer beta-amyloid peptide. PNAS USA, January 1996, Vol. 93, pp. 452-455, whole document.	1-15
A	BARD et al. Peripherally administered antibodies against amyloid beta-peptide enter the central nervous system and reduce pathology in a mouse model of Alzheimer disease. Nature Medicine, August 2000, Vol. 6, No. 8, pp. 916-919, whole document.	1-15
A	BUEE et al. Comparative biochemistry of tau in progressive supranuclear palsy, corticobasal degeneration, FTDP-17 and pick's disease. Brain Pathology, 1999, Vol. 9, pp. 681-693, whole document.	1-15

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

16 May 2003 (16.05.2003)

Date of mailing of the international search report

**02 JUN 2003**

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

*Felicia D. Roberts for*  
Olga N. Chernyshev

Telephone No. (703) 308-0196